

3M™ Scotchkote™ Epoxy Metal Repair EG 503

Data Sheet and Application Guide

Product Description

Scotchkote Epoxy Metal Repair EG 503 is a specifically developed high performance metal compound that provides good mechanical strength combined with easy machining properties.

Product Features

- Combines good machining characteristics with good mechanical properties.
- Designed for application by trowel or spatula at thicknesses upto 12mm.
- Provides outstanding cold weld capabilities.
- Designed for use to repairs to cracked casting and rebuilding worn shafts, bearing housings, flanges etc.
- Excellent adhesion to correctly prepared metal surfaces.

General Application Steps

1. Remove oil, grease and loosely adhering deposits.
2. Abrade by appropriate means to create a coarse profile.
3. Apply Scotchkote Epoxy Metal Repair EG 503 to the required thickness.
4. Allow to cure.
5. Visually inspect the system for defects.
6. Repair any defects.
7. Carry out machining as required.

Properties

Property	Value
Colour	Grey
Ratio	3:1 By volume 5:1 By weight
Drying & Cure times at 20°C (68°F)	
Useable life	25 mins
Initial Set	60 mins
Hard Dry for machining	2 hours
Full Mechanical Cure	3 days
Volume Solids	100%
Film Thickness	Upto 12mm.
Volume Capacity	410cc (25 cu ins) per kilo
Flexural Strength	70Mpa (10000 psi)
Compressive Strength	109 Mpa (15500 psi)
Heat Distortion Temperature	90°C (195°F) post cured 24 hrs@ 100°C (212°F)
Tensile Shear Adhesion	17.24 Mpa (2500 psi)



Application Procedures for 3M™ Scotchkote™ Epoxy Metal Repair EG 503

Surface Preparation

Heavy contamination due to oil or grease must first be removed using 3M™ Scotchkote™ Cleaner 020. All loose material, rust and surface contaminants, including existing coatings, must be removed and the surface roughened by using an angle grinder, needle gun or abrasive blasting.

Where grinding or needle gunning is used, the surface should be cross-scored to improve adhesion. Care must be taken, when angle grinding, to avoid polishing rather than roughening metal surfaces. Where possible, abrasive blasting is the preferred surface preparation, especially in fluid flow repairs.

Surfaces should finally be carefully degreased using Scotchkote Cleaner 020. Cloths should be frequently changed to avoid spreading contamination. On deeply pitted surfaces or porous castings, the cleaner should be worked into the surface by brush and washed off using excess cleaner.

Parts (for example, threads or bearing surfaces) which must remain in position during application but must not adhere to Scotchkote Epoxy Metal Repair EG 503 must be coated with 3M™ Scotchkote™ Release Agent 035 prior to application of the Scotchkote Epoxy Metal Repair EG 503

When treating existing equipment which may have become salt impregnated due to service conditions, surfaces should first be wet blasted then dry blasted and tested for presence of salts. This process should be repeated until all salts are removed.

Product Mixing

Scotchkote Epoxy Metal Repair EG 503 is a two component solvent free material comprising Part A and Part B components which must be mixed together prior to use. Measure 3 volumes of Part A component and 1 volume Part B component onto a clean mixing board or other suitable surface. The two components should then be thoroughly mixed until completely streak free.

The mixed material should be used within 25 minutes of mixing at 20°C (68°F). This time will be reduced at higher temperatures and extended at lower temperatures.

Application Procedures

The mixed material should be pressed firmly onto the prepared area, working the material into any cracks and surface defects.

When Scotchkote Epoxy Metal Repair EG 503 is being used to bond two surfaces together, both surfaces should be coated with the material. The two pieces should then be pressed firmly together and clamped in position until the product has set, any excess material squeezed out should be scraped away before the product begins to cure.

When 3M™ Scotchkote™ Reinforcement Tape 040 is being used to strengthen the repairs the tape should either be impregnated with Scotchkote Epoxy Metal Repair EG 503 or the tape should be laid over the product surface and stippled into the material before it cures, then additional material applied over the surface. Where two applications are required to build up thickness the second application must be carried out within the initial set time of the first application, otherwise the surface of the first application must be abraded.

Packaging and Storage

Supplied in 0.5, 1, 2 and 5 kilo packs

Use within 5 years of date of manufacture. Store in original sealed containers at temperatures between 5°C and 30°C.

Handling and Safety Precautions

Read all health hazard, precautionary and first aid statements found in the Material Safety Data Sheet, and/or product label prior to handling or use.

3M and Scotchkote are trademarks of 3M Company.

Important Notice

All statements, technical information, and recommendations related to 3M's products are based on information believed to be reliable, but the accuracy or completeness is not guaranteed. Before using this product, you must evaluate it and determine if it is suitable for your intended application. You assume all risks and liability associated with such use. Any statements related to the product which are not contained in 3M's current publications, or any contrary statements contained on your purchase order shall have no force or effect unless expressly agreed upon, in writing, by an authorised officer of 3M.

Warranty; Limited Remedy; Limited Liability.

This product will be free from defects in material and manufacture for a period of 12 months from the time of purchase. **3M MAKES NO OTHER WARRANTIES INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF QUALITY OR FITNESS FOR A PARTICULAR PURPOSE.** If this product is defective within the warranty period stated above, your exclusive remedy shall be, at 3M's option, to replace or repair the 3M product or refund the purchase price of the 3M product. **Except where prohibited by law, 3M will not be liable for any loss or damage arising from this 3M product, whether indirect, special, incidental or consequential (including, but not limited to, loss of profits, business and/or goodwill) regardless of the legal theory. For the sake of clarity, nothing in this statement will be deemed to exclude or restrict 3M's liability for death or personal injury arising from its own negligence.**



Corrosion Protection Products 3M United Kingdom plc

23 Standard Way Industrial Estate
Northallerton
North Yorkshire DL6 2XA
United Kingdom
Phone: +44 (0)1609 780170
Fax: +44 (0)1609 780438
www.3M.co.uk/scotchkote

Corrosion Protection Products 3M United Kingdom plc

3M Centre
Cain Road, Bracknell
Berkshire RG12 8HT
Phone: 01344 858000
Fax: 01344 857970
www.3M.co.uk

Please recycle. Printed in UK.
© 3M 2010. All rights reserved.
EG503-1010